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Washtenaw County Autonomous Vehicle Consensus Conference

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WASHTENAW COUNTY

CONSENSUS CONFERENCE ON AUTONOMOUS VEHICLES

OFFICIAL STATEMENT

A PARTICIPATORY PLANNING EXERCISE

SPRING 2018

ACKNOWLEDGEMENTS

This event was sponsored by The University of Michigan Library Mini-Grant and ESPA (Engaging Scientists in Policy & Advocacy) student organization.

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Consultants:

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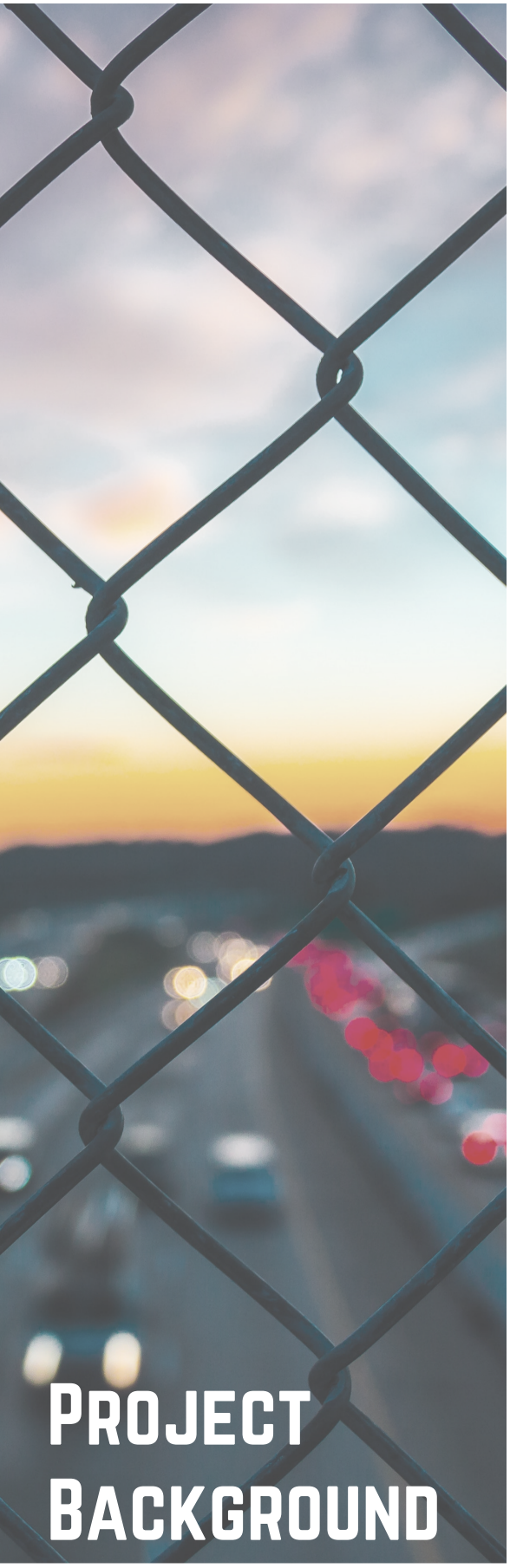
- Brianna Besch, Returned Peace Corps Volunteer & Community Development Expert
- Joy Rohde, Assistant Professor, Ford School of Public Policy, University of Michigan



Project Background

As self-driving cars make the move from science fiction to neighborhood parking lots, their impact on society has become a widespread topic of public debate.

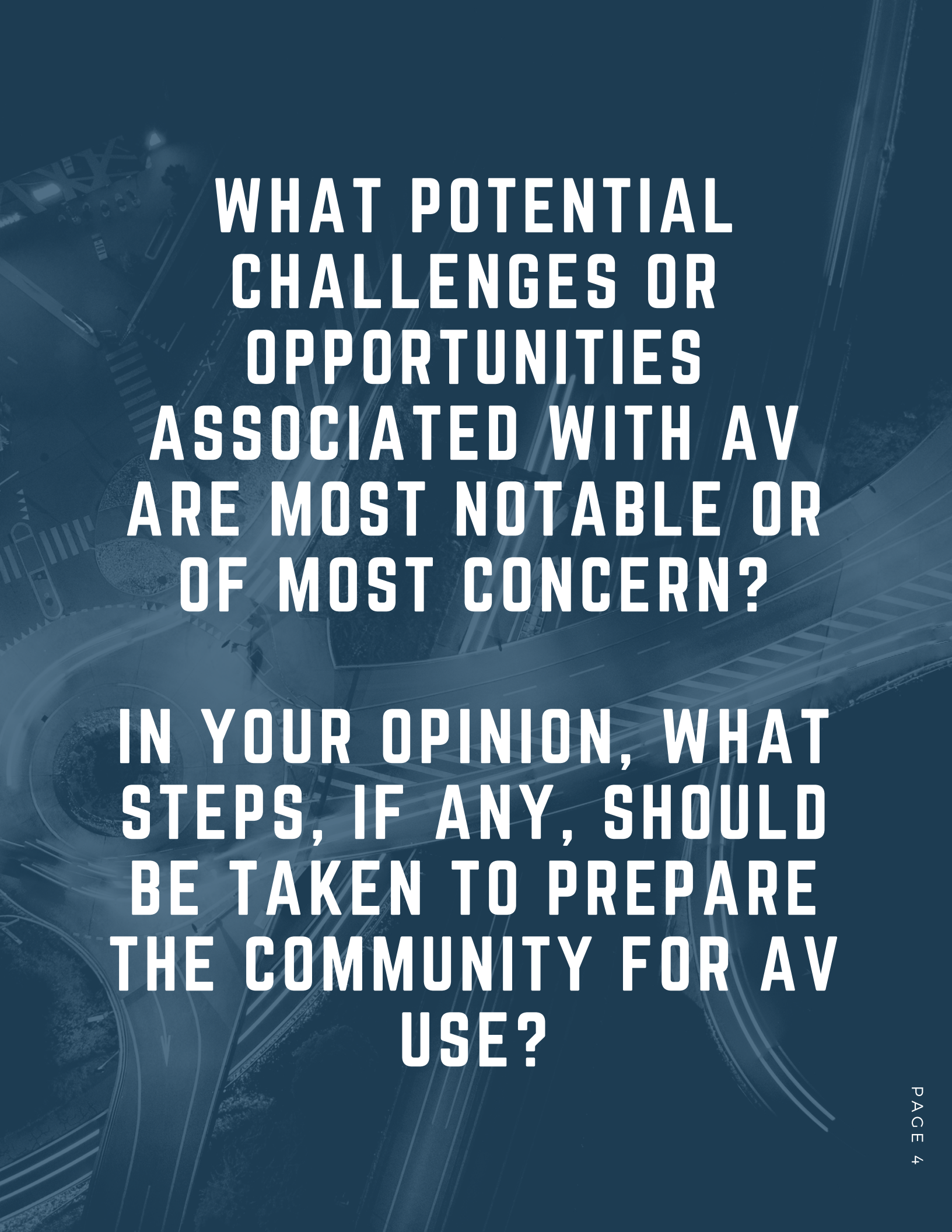
Ypsilanti Township is home to the autonomous and connected vehicle testing facility, American Center for Mobility at Willow Run. Ann Arbor is home to Mcity, " the world's first purpose-built facility for testing connected and automated vehicles and technologies." Mcity expects to launch their driverless shuttle on University of Michigan's North campus beginning Spring 2018. This places the debate in our backyard.

In December 2016, Michigan passed the most "permissive" Autonomous Vehicle (AV) laws in the country, allowing cars on public roads without safety drivers or even steering wheels. According to Michigan state officials, Fiat Chrysler Automobiles, Ford Motor Co, General Motors, Toyota Motor, Google, Uber, and Lyft participated in shaping the final legislation [1]. Across the University of Michigan campus, experts have presented on the technologies, regulatory issues, and business opportunities surrounding Autonomous Vehicles (AV). Missing though, are the critical perspectives and values of the community.

This spring, students from the University of Michigan organized an opportunity for community members to learn about and voice their opinions on what is destined to be a society-altering technology. This type of event, called a consensus conference, enables the public to contribute to the discussion around technologies that impact their lives. To better understand the impact AV has in our community we are looking beyond industry experts to those who will be most impacted—the community members themselves.

11 Washtenaw County citizens convened to answer the charge...

1. Korosec, Kirsten. "Michigan Just Passed the Most Permissive Self-Driving Car Laws in the Country." Fortune, 9 Dec. 2016, fortune.com/2016/12/09/michigan-self-driving-cars/.



WHAT POTENTIAL CHALLENGES OR OPPORTUNITIES ASSOCIATED WITH AV ARE MOST NOTABLE OR OF MOST CONCERN?

IN YOUR OPINION, WHAT STEPS, IF ANY, SHOULD BE TAKEN TO PREPARE THE COMMUNITY FOR AV USE?

PROCESS OVERVIEW

The Washtenaw County Consensus Conference on Autonomous Vehicles convened 11 citizens selected to represent the diversity of Washtenaw County. Over three Saturdays, these participants studied autonomous vehicles (AV), considered the opportunities and challenges presented by the technology, and proposed next steps for local policy makers. This summary offers a brief look at the process. For a more detailed description, the case study is available at: ***bit.ly/WCSelfDrive***

Meeting 1: Background Discussion, Feb 17, 2018 9:00am-12:00pm

Two weeks prior to the citizen panel's first meeting, panelists received background material on AVs. The packet included 11 pages of reading and 4 media links spanning AV classification, history, technology, safety, mobility, traffic, land use, energy and emissions, liability, and privacy concerns. The aim of this material was to provide an objective overview of the current discourse on AVs. References in the report included RAND Corporation's *"Autonomous Vehicle Technology A Guide for Policymakers,"* Inventivio's *"Driverless Car Market Watch,"* videos from leading AV companies, and the Mcity website.

The background discussion, held at the Ann Arbor Downtown Library, began with an orientation to the consensus conference process and discussion guidelines. The facilitators presented and answered questions regarding how AVs work at a high level and the levels of autonomy as outlined by the Society of Automotive Engineers (see Appendix). The citizen panelists first worked individually, then in small groups of three to four, and finally as a full group to determine what they believed to be the top opportunities and challenges associated with AVs. At the conclusion of the meeting, the citizens had determined the following topics to be the most important for the expert panel to address: Safety & Liability; The Policy Making Process; Labor; Inequality; and Cyber Security & Privacy.

Meeting 2: Expert Panel, March 24th 9:30am- 1:00pm

Following the background meeting the facilitators recruited experts for the following panels:

Safety, Liability & Security Panel

- Kyle Logue, Professor, University of Michigan Law School
- Ami Dotan, CEO, Karamba Security
- Dr. Shugang Jiang, SF Motors
- Shan Bao, Ph.D., Associate Research Scientist, University of Michigan Transportation Research Institute
- Lionel P. Robert Jr., Associate Professor, School of Information, Core Faculty, Robotics Institute, University of Michigan

Labor, Equity & Environment Panel

- Aaron Hula, Government Affairs, EPA
- Eric Dennis, Policy Analyst, Center for Automotive Research
- David Palmer, Workforce Intelligence Network
- George Fenton, Economics PhD Student, University of Michigan

While the facilitators attempted to recruit experts who were diverse in perspectives, disciplines, gender, and ethnicity, the majority of experts were male and Caucasian due to expert availability. Additionally, all of the experts were optimistic about a future with AVs.

The expert panels, held at the Ann Arbor Downtown District Library, were open to the public. Forty people attended and the discussion was live streamed (recording here). The citizen panelists voted to have Anna Lenhart, the conference's lead facilitator, moderate the panel based on questions that the citizen panelists developed during the first meeting. Throughout the expert panel presentation the citizen panelists wrote follow-up questions on notecards, which were delivered to the moderator.

Following the expert panel discussions the citizen panelists convened to discuss missing perspectives from the panel and overall perceptions of the experts' comments.

Meeting 3: Report Writing, April 7th 9:00am - 12:00pm

After the second meeting, the facilitator team consolidated all the notes from the previous sessions into a draft position statement that included opportunities and challenges posed by AVs. The citizen panelists convened one final time at the University of Michigan Ford School of Public Policy to edit and expand upon the report draft. As a group, the panelists brainstormed suggestions for policy makers and determined which opportunities and challenges were top priorities. The executive statement, challenges, opportunities, and suggestions that follow are a result of this third meeting and subsequent edits completed over email. The entire citizen panel reached consensus on the notable topics and suggestions. Given the ambiguity of Level 5 vehicle safety performance, the citizens were not able to reach a consensus on whether Level 5 vehicles should be fully embraced. For this reason, you will notice no mention of stopping or increasing development support for Level 5 vehicles.

EXECUTIVE STATEMENT

According to the National Highway Traffic Safety Administration (NHTSA), 37,461 people were killed in 34,436 motor vehicle crashes in the United States in 2016. The majority of these accidents were due to human error. AVs have the potential to save tens of thousands of lives annually. Additionally, AVs offer a unique opportunity to reduce discrimination as it relates to transportation and access to services. Despite these opportunities, a number of challenges and potential repercussions exist.

In order for these opportunities to be realized and repercussions mitigated, policy makers must include the public in the design of AVs inevitable "roll-out" into our communities.

MOST NOTABLE CHALLENGES FOR WASHTENAW COUNTY

1. There are already Level 2 & 3 vehicles on the roads in Washtenaw County and Level 4 & 5 vehicles being tested on test tracks in the county. County administrators, court officials, and consortiums must determine how AVs (of all levels), standard vehicles, pedestrians, and bicyclists will safely share the road. See Appendix for level definitions.
2. Some residents of Washtenaw County do not have access to smartphones. The county must find ways to ensure everyone has access to AV technology without pressure to adopt smartphones or Internet–based applications.
3. AVs are expected to massively disrupt the labor force of vehicle–related industries including the taxi, truck, truck stops (food service), bus, and rail industries. Washtenaw County must ensure that displaced workers are able to meet their basic needs.
4. Industry suggests that AVs will be tied to payment processors, GPS, and likely to the passengers' devices, effectively accessing passenger location, financial information, social media applications, music preferences, etc. This data must be protected.
5. We must consider how to deal with illegal uses of AVs, such as transporting drugs, explosives, etc. What is the balance between privacy and national security?
6. Michigan's term limits on elected State Representatives make it challenging for policy leaders to be thoroughly educated on issues regarding AVs and aware of the public's concerns.

MOST NOTABLE OPPORTUNITIES FOR WASHTENAW COUNTY

1. AVs are predicted to increase road safety by minimizing human threats such as drunk and impaired driving, road rage, and sudden medical issues.
2. AVs have the potential to bring safe mobility to those who are not able to drive a Level 0 vehicle. This includes the elderly population, those with disabilities, license restricted

drivers, under aged residents, and those dealing with language barriers. This mobility could be empowering and lead to more social interactions, improved mental health, better access to educational and medical resources, and increased access to the labor market.

3. The current mass transit systems in Washtenaw County are mostly centered in Ann Arbor and the Ypsilanti urban core, leaving those outside of the city with limited access to important services. AVs could expand access to mass transit hubs and overall access to products and services currently out of reach.
4. Southeast Michigan is positioned to be a leading location for AV development. This could mean an increase in new types of high-paying, stable jobs.
5. Vehicles that drive themselves have the potential to reduce racial profiling by highway patrol officers.

SUGGESTIONS TO PREPARE THE COMMUNITY FOR AV'S

1. Advocate for National Safety Standards that are continually adjusted as AV technology advances.
2. Increase investments in educational opportunities in order to build a labor force that can take advantage of new AV related jobs. This includes strengthening public pre-Kindergarten, K-12, and higher education programs throughout the county, along with creating retraining programs for those in professions threatened by AV technology. The programs should be funded through partnerships with the automotive industry.
3. Continuously incorporate citizen voices in the planning process. Consultation with stakeholder groups such as Center for Automotive Research (CAR) yield valuable insights but is not sufficient for assessing the public's desires and concerns. The benefits from AVs vary greatly based on how the technology is introduced to our community (example: ride-share versus ownership versus mass transit). The public

wants a say in how AVs are implemented, and this requires ongoing conversation with public representatives.

4. Require AVs to incorporate visible, exterior markings that allow the public to know when they are on the road with an AV. These markings should be on an AV of Level 2 or above and an additional marking should be present in the absence of a safety driver.
5. Ensure that AV does not threaten the public transit system. Policymakers should give priority to expanding public transportation access rather than AV investment.
6. Consider the data security issues around AV technology. For example, what is the procedure for the police to access data recorded by AV? Once this procedure is designed, ensure citizens are aware.
7. Educate drivers on what to do in the event of a collision with an AV, and develop a protocol for police response.
8. Hold crash instigators liable for damages, including manufacturers, owners, and those who tamper with AVs. Consider the inadequacies of old laws, and the differences between legal theory and practice in regards to tort law.
9. Educate the public on how to lobby at the state and federal levels, so that citizen voices influence public policy at all levels.

PANELIST DEMOGRAPHICS

Due to a limited budget, we were not able to randomly select households in Washtenaw County to participate on the citizen panel. Instead, we created an online questionnaire (and mail-in option). We used the Guide Star database to create an email list of every non-profit executive director in the county. We then encouraged those leaders to email their followers the application. We also created two weeks of Facebook campaigns that targeted citizens throughout the county. We received 40 applications and selected 15 citizens, making an effort to meet the demographic goals outlined below. Unfortunately four of the selected applicants were not able to participate. The final panel skewed over-educated and from Ann Arbor. Future events should dedicate more resources to expanding the application pool.

Demographic	Washtenaw County Percentage	Ideal # of Participants	Actual # of Participants
Gender			
Female	50.5%	6	6
Male	49.5%	5	5
Race/Ethnicity			
Caucasian/White	71.7%	7	7
Persons of Color/Multiracial	18.3%	4	4
Age			
18-34	34.7%	4	1
35-54	26.2%	3	6
55 & Over	39.0%	4	4
Ann Arbor / Greater Washtenaw			
Ann Arbor	32.3%	4	6
Greater Washtenaw	67.7%	7	5
Education*			
Less than High School	6.3%	1	0
High School or GED	17.8%	2	0
Some college	22.2%	2	2
College Degree	54.7%	6	9
Attitude on AVs			
Positive	unknown	3	7
Neutral	unknown	5	1
Negative	unknown	3	3

**Education percentages based on number of county residents above the age of 5 years old, not enrolled in school*

APPENDIX: LEVELS OF DRIVING AUTOMATION

Level	Name	Narrative definition	DDT		DDT fallback	ODD
			Sustained lateral and longitudinal vehicle motion control	OEDR		
Driver* performs part or all of the *DDT						
0	**No Driving Automation**	The performance by the *driver* of the entire *DDT*, even when enhanced by *active safety systems*.	*Driver*	*Driver*	*Driver*	n/a
1	**Driver Assistance**	The *sustained* and *ODD*-specific execution by a *driving automation system* of either the *lateral* or the *longitudinal vehicle motion control* subtask of the DDT (but not both simultaneously) with the expectation that the *driver* performs the remainder of the *DDT*.	*Driver* and *System*	*Driver*	*Driver*	Limited
2	**Partial Driving Automation**	The *sustained* and *ODD*-specific execution by a *driving automation system* of both the *lateral* and *longitudinal vehicle motion control* subtasks of the *DDT* with the expectation that the *driver* completes the *OEDR* subtask and *supervises* the *driving automation system*.	***System***	*Driver*	*Driver*	Limited
***ADS* ("*System*") performs the entire *DDT* (while engaged)**			*System*	***System***	*Fallback-ready user (becomes the driver during fallback)*	Limited
3	**Conditional Driving Automation**	The *sustained* and *ODD*-specific performance by an *ADS* of the entire DDT with the expectation that the *DDT fallback-ready user* is *receptive* to *ADS*-issued *requests to intervene*, as well as to *DDT performance-relevant system failures* in other *vehicle* systems, and will respond appropriately.				
4	**High Driving Automation**	The *sustained* and *ODD*-specific performance by an *ADS* of the entire *DDT* and *DDT fallback* without any expectation that a *user* will respond to a *request to intervene*.	*System*	*System*	***System***	Limited
5	**Full Driving Automation**	The *sustained* and unconditional (i.e., not *ODD*-specific) performance by an *ADS* of the entire *DDT* and *DDT fallback* without any expectation that a *user* will respond to a *request to intervene*.	*System*	*System*	*System*	**Unlimited**

SAE Automated Driving System Levels (Credit: SAE J3016-201609)

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AUTONOMOUS VEHICLES AND ARTIFICIAL INTELLIGENCE HAVE HUGE POTENTIAL FOR IMPROVING HUMAN LIFE. WE MUST BE SURE THAT IMPROVEMENT IS FOR ALL HUMANS.

~CITIZEN PANELIST